

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A floor panel comprising a rectangular plate which, at least at two opposite sides, is provided with coupling parts in the form of a tongue at the one side and a groove at the opposite side,

the coupling parts comprising integrated mechanical locking means in the form of a protrusion shaped on the tongue and a lip bordering the groove which is formed by the extraction of the material along a longer arm of the groove,

a bearing surface (9) of the lip being inclined to ~~the~~ a center of the floor panel and downwards, the bearing surface (9) of the lip (8) at the longer arm of the groove (5) being concave on an arc with a first radius (r_1), the first radius having a point of engagement ~~of~~ which is situated at an upper border of the floor panel (1),

the protrusion (7) of the ~~groove tongue~~ (6) having, in cross-section, the form of a circular section with a third radius (r_3) which is shorter than the first radius, and

a lower part of the lip (8) and at a lower part of the floor panel (1) from ~~a the~~ side of the circular protrusion (7) having second bearing surfaces (9') inclined in relation to a vertical plane into one direction, at a first acute angle (α); each of said second bearing surfaces (9') being substantially parallel to each other;

the bearing surface, the first radius, the third radius and the first acute angle being selected to ensure that, when one floor panel is coupled to another floor panel, said one floor panel and said another floor panel can displace freely when changes in humidity occur;

whereby possibility of warping of a floor or the destruction of the couplings is substantially eliminated.

2. (Currently amended) The floor panel according to claim 1, wherein the ratio of the third radius (r_3) to the first radius (r_1) is substantially equal to 1:3; and wherein a ratio of the first radius (r_1) to the second radius (r_2) is substantially equal to 1:1.5.
3. (Previously presented) The floor panel according to claim 1, wherein the first acute angle (α) is substantially equal to 30°.
4. (Previously presented) The floor panel according to claim 1, wherein an internal surface (10) of a recess along the longer arm of the groove, situated close to the lip (8), is concave on an arc with a second radius (r_2), which is longer than the first radius (r_1).
5. (Canceled)
6. (Currently amended) The floor panel according to claim 1, comprising at least one longitudinal groove (15) which is situated from ~~the~~ a bottom of the panel.
7. (Currently amended) The floor panel according to claim 1, wherein a bearing surface (9) of the lip (8), near ~~the~~ an upper edge of the lip, turns into a flat surface, which is inclined in relation to the vertical plane at a second acute angle (β), forming a nose (16).
8. (Previously presented) The floor panel according to claim 7, wherein the second acute angle (β) is substantially equal to 15°.
9. (Previously presented) The floor panel according to claim 7, wherein a second internal surface (17) of a recess in a lower arm of the groove (5) is flat and inclined in relation to a horizontal plane at a third acute angle (γ),

wherein the second internal surface (17), near the groove (5), turns into an offset (18) whose surface is flat, inclined in relation to a vertical plane at a fourth acute angle (δ).

10. (Previously presented) The floor panel according to claim 9, wherein the third acute angle (γ) is substantially equal to 20° and the fourth acute angle (δ) is substantially equal to 38° .
11. (Previously presented) The floor panel according to claim 1, wherein the bearing surface (9) comprises a longitudinal recess shaped like a trough (19), in cross-section, the surface of which is concave on an arc of the third radius (r_3) which is equal to a radius of the circular protrusion (7).
12. (Previously presented) The floor panel according to claim 11, wherein the second internal surface (17) is flat and inclined in relation to the horizontal plane at the third acute angle (γ),
wherein the second internal surface, near the groove (5), turns into an offset (18) of flat surface inclined in relation to the vertical plane at the fourth acute angle (δ).
13. (Previously presented) The floor panel according to claim 12, wherein the third acute angle (γ) is substantially equal to 20° and the fourth acute angle (δ) is substantially equal to 38° .
14. (Previously presented) The floor panel according to claim 1, wherein said floor panel is composed of wood or wood derivative layerwise glued material.
15. (Currently amended) The floor panel according to claim 1, wherein the short sides at the one edge comprise a groove in a near-rectangular form, in cross-section,

wherein the lower arm of the groove comprises a triangular recess (14) whereas at the an opposite side it comprises a second tongue (11) in near-rectangular form, which comprises a second protrusion (12) shaped like a triangle in its lower part.

16. (Previously presented) The floor panel according to claim 9, wherein the bearing surface (9) comprises a longitudinal recess shaped like a trough (19), in cross-section, the surface of which is concave on the arc of the third radius (r_3) which is equal to the radius of the circular protrusion (7).

17. (Previously presented) The floor panel according to claim 16, wherein the second internal surface (17) is flat and inclined in relation to the horizontal plane at the third acute angle (γ),
wherein the second internal surface, near the groove (5), turns into an offset (18) of flat surface inclined in relation to the vertical plane at the fourth acute angle (δ).

18. (Previously presented) The floor panel according to claim 17, wherein the third acute angle (γ) is substantially equal to 20° and the fourth acute angle (δ) is substantially equal to 38° .

19. (Canceled)

20. (Currently amended) The floor panel according to claim 9, wherein the short sides at the one edge comprise a groove in the near-rectangular form, in cross-section,
wherein the lower arm of the groove comprises a triangular recess (14) whereas at the opposite side it comprises a second tongue (11) in near-rectangular form, which comprises a second protrusion (12) shaped like a triangle in its lower part.

21. (Currently amended) The floor panel according to claim 11, wherein the short sides at the one edge comprise a groove in the near-rectangular form, in cross-section,

wherein ~~the~~ a lower arm of the groove comprises a triangular recess (14) whereas at ~~the~~ an opposite side it comprises a second tongue (11) in near-rectangular form, which comprises a second protrusion (12) shaped like a triangle in its lower part.

22. (Currently amended) The floor panel according to claim 16, wherein ~~the~~ short sides at ~~the~~ one edge comprise a groove in the near-rectangular form, in cross-section, wherein ~~the~~ a lower arm of the groove comprises a triangular recess (14) whereas at an ~~the~~ opposite side it comprises a second tongue (11) in near-rectangular form, which comprises a second protrusion (12) shaped like a triangle in its lower part.

23. (New) A floor panel in a shape of a rectangular plate provided with a tongue (6) at one side and a groove (5) at an opposite side, the tongue (6) and the groove (5) forming coupling parts at least at two opposite sides with neighboring floor panels,

the coupling parts comprising integrated mechanical locking means having a protrusion (7) formed on the tongue (6) and a lip (8) bordering the groove (5) formed by an extraction of material along a longer arm of the groove (5),

wherein the lip (8) has a bearing surface (9) inclined to a center of the floor panel and downwards, the bearing surface (9) of the lip (8) being concave on an arc with a first radius (r_1), the first radius having a point of engagement situated at an upper border of the floor panel (1),

and wherein the protrusion (7) of the tongue (6) has, in cross-section, a circular section with a third radius (r_3) being shorter than the first radius (r_1),

and wherein a lower part of the lip (8) and a lower part of the floor panel (1) facing a side of the circular protrusion (7) have second bearing surfaces (9') inclined in relation to a vertical plane at the same direction at a first acute angle (α); each of said second bearing surfaces (9') being substantially parallel to each other; the second bearing surfaces (9') of

the neighboring floor panels after assembling floor panels are distanced at a gap (s) in dried condition and transfer pressure forces caused by expansion of panel material when moistened.

24. (New) A floor panel having a shape of a rectangular plate provided with coupling parts in a form of a tongue (6) at one side and a groove (5) at an opposite side,

the coupling parts comprising integrated mechanical locking means having a protrusion (7) formed on the tongue (6) and a lip (8) bordering the groove (5) formed by extraction of material along a longer arm of the groove (5),

wherein the lip (8) has a bearing surface (9) inclined to a center of the floor panel and downwards, the bearing surface (9) of the lip (8) being concave with a curvature with a first radius (r_1), the first radius having a point of engagement situated at an upper edge of the floor panel (1),

and wherein the protrusion (7) of the tongue (6) has in a cross-section a circular section with a third radius (r_3) being shorter than the first radius (r_1),

and wherein a lower part of the lip (8) and a lower part of the floor panel (1) facing a side of the circular protrusion (7) have second bearing surfaces (9') inclined in relation to a vertical plane at one direction at a first acute angle (α); each of said second bearing surfaces (9') being substantially parallel to each other; the second bearing surfaces (9') of the neighboring floor panels after assembling floor panels are distanced at a gap (s) in dried condition and transfer pressure forces caused by expansion of panel material when moistened whereby possibility of warping of a floor or destruction of couplings is substantially avoided.